

CHAPTER 3: PRODUCTION BILL OF MATERIALS

Objectives

The objectives are:

- Production Bill of Materials (BOM)
- Production BOM Advanced Features
- Production BOM Reports

Manufacturing Product Design

Microsoft Dynamics™ NAV Manufacturing I helps manufacturers to control the manufacturing environment by providing the following functionality:

- Production Bill of Materials (BOM)
- Routings
- Inventory

Another way to describe the production process is to say that a person can use recipes to make things: the Production BOM is the list of ingredients, the Routing tells the person what to do with the ingredients to get a finished product, and the finished product is stored and sold as Inventory.

The manual also shows that production orders keep a queue of what users plan to make, as well as what they will work on next. Additionally, the planning functions tell users what to make or buy and when they need to make or buy those items.

In Microsoft Dynamics NAV Manufacturing I, the Product Design menu helps users understand the creation of a manufactured item in the following ways:

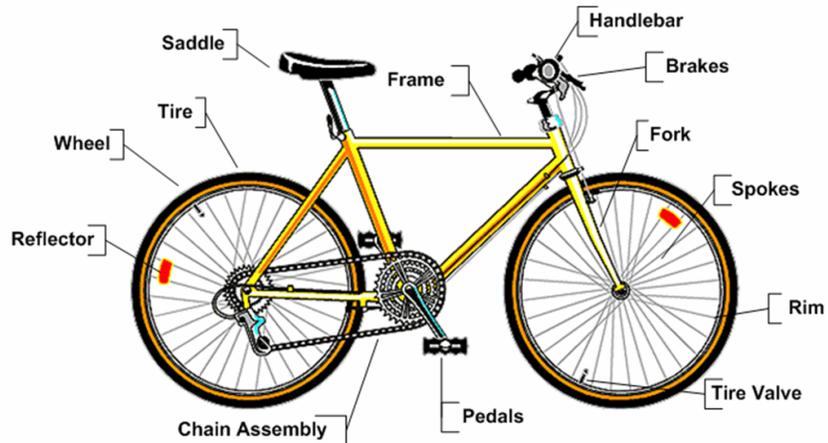
- Defining a finished good and its components.
- Putting the items together into a Production BOM.
- Creating the steps involved in the routing.

Production Bill of Materials

A bill of materials (BOM) is a list of all components and subassemblies needed to make a final product or finished good. The list contains the description, the quantity, and unit of measure.

The end- result of a production BOM can be one of the following:

- Subassembly (used in another item)
- Finished good (an item ready for sale)



Bicycle BOM (Bill of Materials)

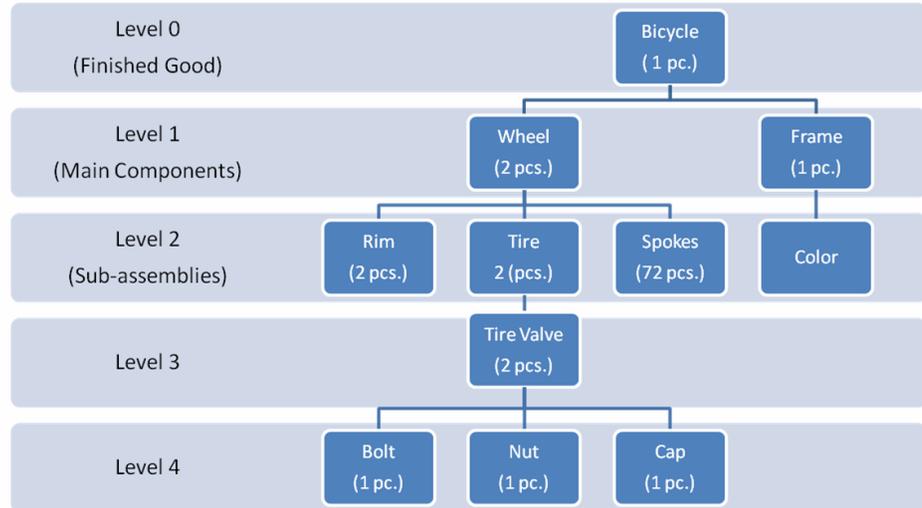


FIGURE 3.1

As shown in the example , a bicycle is composed of many components and subassemblies (frame, tires, chain's assembly, and so on); these are the bicycle's bill of materials. Thus, to manufacture or assemble one bicycle, you need one frame, two wheels, 72 spokes, and so on.

The different levels within the BOM illustrate the parent-component relationship, otherwise known as a “multi-level BOM.” This means that every component occupies a certain level within the hierarchy. Levels define the parts that make up the item that is being produced. This is known as a level code. There are a maximum of 50 levels in Microsoft Dynamics NAV.

Note that a “level 0” denotes a finished product (insofar as the manufacturer is concerned).

In the illustration, Cronus International assembles bicycles as one of its products. Hence, the “level 0” (finished good) designation of the bicycle. However, if Cronus International orders bicycle tires from another manufacturer, then these will be considered as finished goods or “level 0” by that manufacturer (but not by Cronus International).

Low level codes will be covered further in this chapter .

It is possible for an item to be both a subassembly and a finished good, for example, if a part is sometimes sold as a spare part of another item. The items listed on the production BOM are components.

The production BOM is used when production orders are created and is used by the Planning Worksheet to show what needs to be made or purchased.

Once the production order is certified, changes to the components are often made by creating a new version of the production BOM rather than changing the original production BOM.

Production BOM Header

Start by looking at the fields in a production BOM, and then create one. Follow the path Manufacturing→Product Design→Production BOM. To create a production BOM, complete the following fields in the header:

Field	Comments
No.	This field identifies the BOM. It must be unique and have a maximum of 20 characters. The number field can be set to default, using No. Series in the manufacturing set up (Manufacturing→Setup→Manufacturing Setup→Numbering tab), or can be manually created. In a company where each production BOM is used on only one item (a 1:1 relationship), the production BOM number is often set up to be the same number as the item it is connected to.
Description	This field contains the BOM description so that its particular use is easily recognized.

Field	Comments
Unit of Measure	This field is used as a basis for recalculation factors in the BOM line item. The unit of measure used on a production BOM must also be set up in the Item Units of Measure table (from the Item card) before a production order can be created. This topic is examined later in the chapter.
Status	<p>This field indicates the status of a BOM. The valid statuses are:</p> <ul style="list-style-type: none"> · New · Certified · Under Development · Closed <p>New The status is automatically set to New when creating a new BOM and it is editable.</p> <p>Certified The program allows a BOM with the status of Certified to be used for production planning and orders. A Certified BOM is not editable and an error message displays if a user attempts to use a non-Certified BOM.</p> <p>Under Development This status indicates that a Certified BOM is undergoing edits or changes. After the edits or changes have been completed, the status must be changed back to Certified. This is not used in Cost Rollup for the item. (Refer to the Manufacturing Costing training manual for more information on cost roll up.) Cost is not calculated with this status.</p> <p>Closed This status indicates that the BOM is no longer used. (Similar to the Block option used elsewhere in Microsoft Dynamics NAV.) This is not used in Cost Rollup for the item.</p>
Search Name	This field can be used to search for a BOM when its number has been misplaced. It defaults from the description and can be up to a maximum of 30 characters. This field can be edited to create a more mnemonic search name.
Version Nos.	This field shows the version number series applicable to the Production BOM. You can choose a number series from the No. Series table or leave it blank.
Last Date Modified	This field tracks the last date the BOM was edited or changed.

Production BOM Lines

The production BOM lines show the components. Components can be items or production BOMs, usually called Phantom BOMs. Fill in the following fields:

Field	Comments
Type	<p>Use the Assist button (F6) to select from the following options:</p> <ul style="list-style-type: none"> • Item • Production BOM • Blank <p>Item This option lets users select an item from the inventory item file in the production BOM. If the item is a produced item and has a production BOM, the components are automatically considered when the BOM is exploded.</p> <p>Production BOM This option utilizes a phantom BOM in the line.</p> <p>Blank This option is used to add a comment after a production BOM line. Comments do not carry through to production orders.</p>
No.	Choose an Item No. or production BOM No. to use on this line.
Quantity per	This usually indicates the quantity of the component required for the production of one production BOM item. If using a calculation formula, the amount in the field is multiplied by calculation specifications to compute the quantity.
Calculation Formula	<p>This field is used to determine how the Quantity per field must be calculated. Select one of the following options:</p> <ul style="list-style-type: none"> • Blank (the quantity is not calculated) • Length (Quantity = Length * Quantity per) • Length * Width (Quantity = Length * With * Quantity per) • Length*With*Depth (Quantity = Length * With * Depth * Quantity per) • Weight (Quantity =Wight*Quantity per)

Field	Comments
Unit of Measure Code	Use the Assist button (F6) to select the unit of measure used by this production BOM line. It defaults from the item or production BOM card. You may use a “consumption unit of measure” by entering new information in the Item Units of Measure table.
Scrap %	Enter the percentage of scrap expected for this component when it is being used in this production BOM. Scrap on the production BOM line increases the required amount of the component item selected. For example, if the scrap percent is 20 (for 20%), the Quantity per is 1, and the amount of the parent part is 10, then $(10 \times (1 + .20)) = 12$ components are required. There are other types of scrap calculation that can be entered elsewhere in Microsoft Dynamics NAV; these are discussed later .
Routing Link Code	These codes are used to relate material to an operational step. They are discussed in detail in another section. A BOM cannot be Certified using routing link codes unless the codes have been assigned to the operational steps on the routing.
Position/Position 2/Position 3	In these fields, you can define different inventory placements that refer to ancillary materials-a working drawing, for example.
Production Lead Time	<p>Enter the time required to prepare the item on the line for production. Use D for Days, Y for Years, and so on.</p> <p>During replenishments planning, the value in this field offsets the due date of the component on that line in the production BOM. The program makes the following calculation:</p> <p>Component Due Date = (Finished Good Starting Date) - (Component Production Lead Time).</p>

Field	Comments
Starting Date and Ending Date	These can be specified for each line item in the BOM to show the valid dates for the component. These fields are used in execution of the batch processes Exchange Production BOM item and Delete Expired Components.
Comments	Comments can be entered for the entire production BOM, as well as for its individual components.

Create a Production BOM

As previously mentioned, a production BOM is created to determine the materials required to manufacture or assemble a specific item.

Demonstration 1

Follow these steps to create a production BOM:

1. Go to Manufacturing→Product Design→Production BOM.
2. Click in the Number field and insert a new production BOM by pressing F3.
3. Enter a number for the BOM. It can be the same as the item number for the item that the BOM is connected to.
4. Fill in the description of the BOM.
5. Choose a unit of measure code. Press F6 to view the list of available units of measure. Keep in mind that the unit of measure on the production BOM has to be listed in the item Units of Measure table for any item it is used with.
6. Move to the production BOM lines. Use the mouse or Ctrl+arrow down to get to the lines.
7. In the first column (under Type), choose “Item.”
8. Under the **No.** field, press **F6** and look up to a list of items. Click an item number to include in the BOM, and click OK.
9. Enter a quantity in the Quantity per field.
10. Repeat steps 7 through 9, adding new components to your production BOM.
11. On an empty row (under Type), choose Production BOM in the first column. In the No. field, use the Assist button (F6) or the click on the arrow to look up a list of production BOMs. Choose a production BOM.
12. In the **Status** field, select “Certified.”

Copy BOM

The creation of a new BOM can be streamlined using the Copy BOM function. Once the components have been copied to the new BOM, users can make changes or augmentations.

Demonstration 2

Create a new production BOM that is similar to the first one by following these steps:

1. Go to Manufacturing→Product Design→Production BOM.
2. Click in the **Number** field and insert a new production BOM by pressing **F3**.
3. Enter a number.
4. Fill in the description.
5. Choose a unit of measure.
6. Click on a production BOM line (those under Type, No., Description, and so on).
7. Go to the **Functions** button and choose Copy BOM.
8. From the list, choose the production BOM you just created in demonstration 1, and press **OK**.
9. All of the components are copied into the new production BOM. Changes can be made by adding or deleting components or changing the quantities.
10. In the **Status** field, select “Certified.”

***NOTE:** While maintaining a production BOM or production BOM version, the **Status** field must be set to “New” (the starting default) or “Under Development.” For a production BOM to be available for use in production orders, MRP, and item cost calculation, the status must be “Certified.”*

Changing or Correcting Production BOM lines

If a production BOM is changed, users have two options:

- Change the production BOM itself (if changes are not tracked).
- Create a version (required if the company tracks engineering changes).

Demonstration 3

Follow these steps to change a BOM:

1. Go to the production BOM created in the previous exercise.
2. In the **Search Name** field, press **F5** to review a list of BOMs.
3. Select the BOM that you want to change and click OK.

4. In the **Status** field, select “Under Development.”
5. Make the desired change in the components list.
6. Change the Status to “Certified.”

Production BOM Versions

Sometimes, a company needs to make an adjustment to a production BOM, but does not necessarily need to create an entirely new production BOM.

***EXAMPLE:** The company engineer determines that to improve the quality of a product, a change must be made to the components. This is sometimes called an engineering change order (ECO). Rather than creating an entirely new production BOM, the current one is updated by creating a “version.” This allows the company to maintain the original production BOM in case it is needed for reference, but to use the updated production BOM in production. Using versions also maintains the product structure if the production BOM is used in many items.*

Notice that a starting date can be entered in the version header. Production orders created on or after the starting date in the version header uses the new BOM or components list. When setting the starting date, new ECOs can be phased in.

Copy BOM Version

To streamline the creation of a new BOM version, use the function Copy BOM Header or Copy BOM Version. Once the components have been copied to the new BOM version, users can make any necessary changes or modifications to the lines before certifying the BOM.

Demonstration 4

Go to the production BOM you created in demonstration 1 and follow these steps:

1. Click Prod. BOM→Versions button.
2. In the **Versions Code** field, enter a version number, such as “1”.
3. Fill in the Description and Unit of Measure Code fields.
4. In the **Starting Date** field, enter a date in the future. This field is used in Planning and creation of production orders. If a process is run before the Starting Date, then the original BOM (or a previous version) is used.
5. Click on a production BOM line (those under Type, No., Description, and so on).
6. Go to Functions→Copy BOM Header. Choose Yes to copy from the Production BOM.

7. Make the ECO changes to the components list; insert, delete or modify production BOM lines.
8. In the **Status** field, select “Certified.”

Active Versions

The active version can be seen from the production BOM card. If the original production BOM is the active version, the field is blank.

Demonstration 5

Follow these steps to view the active version:

1. Go to the production BOM you have been working with.
2. From the header, note that the **Active Version** field is blank.
3. Click Prod. BOM→Versions button.
4. Change the **Starting Date** field to a date that is before your work date. Make sure that the version is “Certified.” Remember that if the version is not Certified, it is not available for use.
5. Go back to the production BOM header and note that the **Active Version** field is filled in. You can view the active version by using the look up in the **Active Version** field.

Matrix per Version Window

The Matrix per Version window is used to compare all of the existing versions of a production BOM. This window offers a view of the components on either a single level or multi level basis.

In the production BOM just created, click Prod. BOM→Matrix per Version button. If the cursor is on a component that is a manufactured item, click Item→Matrix per Version button to view the versions for the component.

The default view of the versions is on a single level. Select Multi to view the entire product structure in an exploded form.

Where-Used Feature

The where-used feature shows where a production BOM or item is used throughout the product structure. (A similar feature is available for routings.) The single and multilevel features are helpful tools when performing maintenance or troubleshooting. When viewing multilevel, the indentation of the description field indicates the level within the BOM structure, similar to an indented BOM. The quantity needed includes scrap percentage from the production BOM line.

You can access the where-used information in three ways:

- To see which items use a production BOM, choose Prod. BOM→Where-used button.
- To see which items have a component, place the cursor on a production BOM line, and then choose Component→Where-Used.
- To see where an item is used, go to Manufacturing→Product Design→Items. Choose Item→Manufacturing→Where-Used.

Production BOM Advanced Features

Phantom Bill of Material

A phantom BOM is a bill-of-material used for non-stocked subassemblies. In Microsoft Dynamics NAV, a phantom BOM is a production BOM that is chosen on a production BOM line.

A phantom BOM represents a group of items that are put together immediately before being used in production. Instead of listing each of the items needed in the production BOM lines, users can choose the phantom BOM.

Phantom BOMs allow the MRP process to account for the components without having to create an Item card or a separate production order for the subassembly.

The time required for assembling a phantom BOM is considered to be zero or is accounted for in the master item's routing.

Using phantom BOMs can also simplify the creation or review of production BOMs by listing the phantom BOM instead of each component.

Deciding whether a subassembly will be set up as a phantom BOM or an item is a matter of opinion, and the decision is usually made by the engineers or production managers.

The following demonstration shows the use of a phantom BOM.

Demonstration 6

Follow these steps:

1. Go to Manufacturing→Product Design→Production BOM.
2. Insert a new production BOM by pressing **F3**.
3. Enter the No., description, and unit of measure in the header.
4. On the lines, enter two or more components that are items that make sense to use as a subassembly. For example, if building a bike, a user might choose the chain assembly as a subassembly.
5. Change the status to Certified.

Now, go to one of the production BOMs created earlier in the chapter and add the phantom BOM. Create a new version of the BOM using the Copy Version function and add the phantom BOM to the lines.

6. From a production BOM, choose Prod. BOM→Versions.
7. In the Version Code field, enter a number. Then choose Functions→Copy BOM Version.
8. In the first column (under **Type**), choose “Production BOM.”
9. Use the look up button (**F6**) to choose your subassembly in the **No.** field.
10. Change the Status to Certified and enter a Start Date so that this version becomes the current version.

Calculation Formula for Bill of Material

It is sometimes necessary to specify a calculation formula, such as length multiplied by width, for the component quantity needed in a production BOM. To illustrate this, create an item card for steel. It is inventoried in sheets and purchased in pounds. A 10 foot by 15 foot sheet weighs 100 pounds. Another item, such as the bicycle in the previous demonstration, requires a 3 foot by 5 foot sheet of steel.

Demonstration 7

1. From the Manufacturing menu, choose Product Design→Items.
2. In the General tab, click in the No. field and press **F3**.
3. In the **Description** field, type “Steel”.
4. Click the **Assist button (F6)** in the **Base Unit of Measure** field and add the following units of measure:

Unit of Measure	Qty per Unit of Measure
SHEET	1
LBS (Pounds)	0.01 (1/100)
SQFT (Square Feet)	0.00667 (1/150)

***NOTE:** If “sheet” as a unit of measure does not exist please refer to the next exercise.*

5. Select Sheet as the Base Unit of Measure and click **OK**.
6. On the **Invoicing** tab, enter LCY 100 in all editable cost fields.
7. On the **Replenishment** tab, enter a Purchase Unit of Measure of LBS.

Now, use this new item in a production BOM.

1. From the Manufacturing menu, go to Product Design→Production BOM. Choose a production BOM, to which the steel can be added, or create a new production BOM.
2. On a new line, enter the item Steel. Enter the following:

Calculation Formula	Length * Width
Length	3
Width	5
Quantity per	1
Unit of Measure	SQFT

3. Change status to Certified.

Notice that the steel requires 15 square feet to make one finished item. ($1 * 3 * 5 = 15$).

Create Unit of Measure

To create a unit of measure:

1. From the Manufacturing menu, choose Product Design→Items. An Item Card appears.
2. In the General tab, click on the No. field and press **F3**.
3. In the **Base Unit of Measure** field, click the **Assist button (F6)**.
4. In the Code field, click the **Assist button (F6)**.
5. Scroll down until you find a blank field.
6. Under Code, enter SHEET.
7. Under Description, enter Sheet.
8. Click OK twice.

Exchange Production BOM Item

The Exchange Production BOM Item report enables users to replace items that are obsolete with replacement parts. From the Manufacturing menu, choose Product Design→Exchange Production BOM Item. It contains the following setup:

Field	Comments
Exchange Type	<blank> Item Production BOM Do not choose <blank>
Exchange No.	Item No. or Production BOM No. to be replaced.
With Type	<blank> Item Production BOM Choose <blank> to expire or delete a component but not replace it.
With No.	New Item No. or Production BOM No.
Create New Version	Select this check box to have the replacement in a new version. The version is first copied and then the replacements are made. The old version remains unchanged. The Starting Date from the report is copied to the version.
Multiply Qty. with	Quantity ratio = New quantity / Replaced quantity
Starting Date	Enter the date that you want the substitution to be in effect.
Recertify	Select this check box to certify the changed BOM after the exchange process is complete. The exchange batch job automatically changes the status of the current BOM to Under Development, makes the change, and then re-certifies the modified BOM.
Copy Routing Link	Check this box if you want the routing link to be copied to the new component.
Delete Exchanged Component	You can choose to delete the exchanged component if you have not chosen to create a new version. The Starting Date from the report is copied to the production BOM line.

***NOTE:** If wanting to neither create a new version nor delete the exchanged component, then view both Starting Date and Ending Date used on the production BOM lines. To delete the old items, run the Delete Expired Components report, described in the same titled topic .*

Delete Expired Components

The Delete Expired Components report is a maintenance function for BOM lines whose ending date have expired.

Look at the report by going to Manufacturing→Product Design→Delete Expired Components. The Delete Expired Components window contains two tabs:

- Production BOM Header
- Options.

The Production BOM header is where users enter filters to determine which production BOM lines are to be deleted. Filters can be set on all fields on the production BOM header, as well. Users can enter the field name directly or use the **Assist button (F6)** to show the production BOM list. The order of the columns does not affect the filter.

The **Options** tab is where users define the date up to which all components are to be deleted; this data is entered in the **Delete Before** field. Enter a “T” if today's date must be used, or a “W” if the working date is to be used. Otherwise, enter the date to be used for the routine.

This report is used when having to manually enter an end-date on production BOM lines, or used with the Exchange Production BOM item report, described above .

Inventory and Manufacturing Units of Measure

The production BOM also has a **Unit of Measure** field on the header. This “manufacturing batch” unit of measure defines the quantity in which a produced item is manufactured.

For example, an item's stocking unit of measure is pounds (lbs.) and a user might want to produce a ton of this item at a time. In this case, it is beneficial to record the component requirements needed for the production BOM based on producing a ton, rather than a pound, of the parent item.

Often, a production unit of measure is the same as the item's base unit of measure. This means that the user must count an item (base unit of measure) as a “piece” and you produce it as a “piece,” as well. When the production BOM unit of measure is not the same as the item's unit of measure, you need to set up the production BOM unit of measure in the item's Item Unit of Measure table. The Item Unit of Measure table is the table accessed by clicking in the **Base Unit of Measure** field on the **General** tab of the Item Card.

In addition to being able to create a manufacturing batch unit of measure, users can also create a “usage unit of measure” for a component that differs from the component base unit of measure.

NOTE: The next section reviews how to do this using a calculation formula.

Calculate Low Level Code

As previously mentioned, every component, item, and subassembly in a product is assigned a level code. The level code signifies the relative level in which that item or subassembly is used within the product structure. Often, the end items are assigned a level of zero (0), with its components assigned levels of one (1) and so on. Low level codes are necessary for the planning process, MPS and MRP, to work properly. Incorrect low level codes mean that the quantity suggested by the planning process might be incorrect.

The periodic activity Calculate Low Level code must be run if you have set Dynamic Low-Level code to “No” in Manufacturing→Product Design→Setup→Manufacturing Setup.

Calculate Low level Code determines the low level code in this way:

- Item A is assembled. Its main components are items B and C.
- Items B and Item C are purchased.
- Item B is both a subassembly and a finished good. Its components are items D until J.

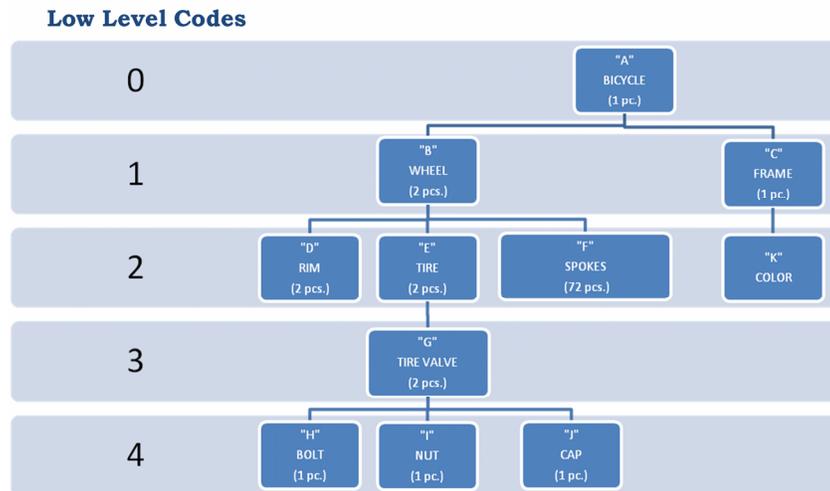


FIGURE 3.2

In this example:

Item A (bicycle) is the top level, or level 0.

Items B (wheel) and C (frame), are level 1.

Items D (rim), E (tire), F (spokes), and K (color) are level 2.

Item G (tire valve) is level 3.

Items H (bolt), I (nut), and J (cap) are level 4.

An item is always assigned the lowest level code possible.

Production Design Reports

Quantity Explosion of BOM Report

View The Quantity Explosion BOM report by going to Manufacturing→Product Design→Reports. This report prints an indented BOM listing for items specified in the filters. The report contains the following columns:

Column	Description
Level	A number and an indentation indicate the level within the BOM structure.
No.	This is the item or production BOM (phantom BOM) number.
Description	This is text taken from the item master data or the description of the used production BOM.
BOM Quantity	This is the quantity of the item or production BOM required to make one of the master item.
Unit of Measure Code	Code for the unit of measure.
Total Qty.	Shows the total quantity of the component needed.

In this example, the company makes tricycles. In the production BOM, a line is entered that shows the company uses three wheels for each tricycle, and each wheel uses 25 spokes. When entering “tricycle” in the quantity explosion of BOM report, the following appears:

Level	No.	Description	BOM Qty	U of M	Total Qty
1	###	Wheel	1	#	3
2	###	Spokes	25	#	75

If the production BOM structure is changed and now shows this information:

Front wheel	1
Back left wheel	1
Back right wheel	1

Then the report shows:

Level	No.	Description	BOM Qty	U of M Total	Qty
1	###	Front wheel	1	#	1
2	###	Spokes	25	#	25
1	###	Back left wheel	1	#	1
2	###	Spokes	25	#	25
etc.					

Demonstration 8

Preview the report as follows:

1. From the Manufacturing menu, select Product Design→Reports→Quantity Explosion of BOM.
2. On the **Item** tab, enter one or more items that are produced (that is, have a production BOM on the item card), such as one of the items that has been used as an example.
3. On the **Options** tab, enter a date to use for the calculation.
4. Click the **Preview** button to display the report.

Where-Used (Top Level) Report

The Where-Used (top level) report shows where items specified in the filters are used in the product structures. Unlike the Quantity Explosion of BOM report described above, in this report enter components or subassemblies. The report shows where those items are used in the production BOM. The “levels” are the opposite of those for the Quantity Explosion of BOM report. This means that they are “bottom up,” rather than “top down.”

This report is helpful, particularly in two cases:

Quality Control: After a production run, it is standard for the Quality Department to take a sample to ensure that the finished goods complies with the manufacturing specifications (materials used, quantity, type) as well as legal requirements, when applicable.

Recall: If an error during the manufacturing run is discovered (for example, wrong or defective component used). The report allows the production manager to trace and recall items that have been erroneously manufactured-saving time and money for the company.

Demonstration 9

Your company makes tricycles. In the production BOM, you have entered a line that shows the company uses three wheels for each tricycle, and each wheel uses 25 spokes. When entering “tricycle” in the Where-Used (Top Level) report, the following appears:

Level	No.	Description	Exploded Quantity
1	###	Wheel	25
2	###	Tricycle	75

This report is showing that 25 spokes go into the wheel, based on the production BOM. It shows that (25 spokes X 3 wheels) = 75 spokes go into a tricycle.

If the production BOM structure is changed and now shows:

- Front wheel 1
- Back left wheel 1
- Back right wheel 1

The report shows:

Level	No.	Description	Exploded Quantity
1	###	Front Wheel	25
2	###	Tricycle	25
1	###	Back Left Wheel	25
2	###	Tricycle	25
1	###	Back Right Wheel	25
2	###	Tricycle	25

Print the report as follows:

1. From the Manufacturing menu, select Product Design→Reports→Where-Used (Top Level).
2. On the **Item** tab, enter one or more items that are produced (that is, have a production BOM on the item card), such as one of the items that has been used as an example.
3. On the **Options** tab, enter a date to use for the calculation.
4. Click the **Preview** button to display the report.

Routing Sheet

The Routing Sheet is mentioned here because it is one of the four reports listed under product design. This report is viewed when you look into Routing setup in a subsequent chapter.

Compare List Report

The Compare List report compares the components for two selected items. The report shows the following:

- Components
- Unit costs
- Exploded quantities
- Cost shares (unit cost multiplied by exploded quantity)
- Total cost difference

The report uses the **Unit Cost** field from the Item cards.

If using a Costing Method other than Standard Cost, users must run the Adjust Cost-Item Entries before running this report to update the unit cost field. The Adjust Cost-Item Entries is found in Financial Management→Inventory→Costing and is described in the Inventory Costing Manual.

Demonstration 10

Print the report as follows:

1. From the Manufacturing menu, select Product Design→ Reports→Compare List.
2. Enter two items in the specified fields. Each item must be produced, that is, it must have a production BOM number entered on it.
3. Enter a Calculation Date so that the correct version is used.
4. Click the **Preview** button to display the report.

Test Your Skills – Production Bill of Materials

NOTE: the item and BOM numbers mentioned here are for your guidance only. You may need to create these items and the production BOM, if these do not exist in your database (demo data).

Scenario

Lab 3.1 – Create Production BOM

Scenario: You are a super user at Cronus International. As a part of a new product launch, you are adding a water bottle to the standard production BOM for one of the bicycles.

Create a production BOM for the water bottle assembly (item 2000), and structure the water bottle mounting bracket (item 2010) and the water bottle (item 2020) in it. Assign BOM 2000 to item 2000.

Lab 3.2 – Use Copy Production BOM

Create a production BOM for the touring bicycle (item 1001). Use the standard bicycle (item 1000) as a base from which to copy the components. Add the water bottle assembly (item 2000) to the touring bicycle production BOM. Assign BOM 1001 to item 1001.

Now go to reports and choose Compare List. Enter the produced items created in the two exercises and preview the report to see the differences.

Lab 3.3 – Create and Compare Versions

For the purpose of this exercise, the touring bicycle (item 1001) is modified, so users practice with two versions: with and without the water bottle assembly (item 2000).

1. Copy the line items from the touring bicycle (item 1001) created in exercise 2 and establish version A with a date of 11/01/08.
2. Create version B with a date of 11/15/08. Paste in the same lines and then delete the water bottle assembly (item 2000).
3. Click the **Prod. BOM** button and then click Matrix per Version. Observe the differences. When finished, delete versions A and B.